REMARKS

The undersigned would first like to thank the Examiner for helpful and extensive input on claim amendments to bring the claims directed to antibodies against the novel proteins of the invention into allowable form. Indeed, the claim amendments and new claims described herein reflect the Examiner's suggestions, and it is therefore believed that these claims are now in condition for allowance.

With this amendment, claims 74-76 and 79-81 have been amended and claims 82-88 have been added. Claims 80-81 have been withdrawn by the Examiner from consideration as being drawn to a non-elected invention. Accordingly, upon entry of the present amendment, claims 74-88 are pending.

Claims 74-76 have been amended in matters of formal claim language, and to recite that the antibody "binds to" a mammalian Presenilin protein comprising SEQ ID NO:2, 4, or 134; at least six contiguous amino acids from these sequences; or an amino acid sequence of SEQ ID NOS: 2 or 134 selected from a particular group; claims 74-76, respectively. This amendment is supported by the specification at, *e.g.*, page 7, lines 1-13; page 63, line 1 to page 65, line 4; and by Example 10, pages 91-92.[1] For example, at page 7, lines 6-13, the specification recites, (using the term "ARMP" instead of presenilin):

> Monoclonal antibodies having suitably specific binding affinity for the antigenic regions of the ARMP are prepared by use of corresponding hybridoma cell lines. In addition, other polyclonal antibodies may be prepared by inoculation of animals with suitable peptides or holoprotein which add suitable specific binding affinities for antigenic regions of the ARMP.

Claim 79 has been amended to depend from claim 77 instead of 74. Claims 80 and 81 have been amended in matters of formal claim language.

[1] All references to sections of the specification herein refer to page and line numbers of the substitute specification, filed April 10, 2001.

New claims 85-88, directed to an isolated antibody raised against a mammalian Presenilin protein or an antigenic fragment thereof, are supported by the specification at, *e.g.*, page 63, line 1 to page 65, line 4; and by Example 10, pages 91-92.

No new matter has been added by way of this amendment. Each of the Examiner's objections and rejections are discussed below.

Claim Objections

The Examiner has objected to claims 74-79 for allegedly reciting an improper Markush group.

After entry of the present amendment, claims 74, 75, 77-81, and 84-88 read on antibodies that bind to or that are raised against SEQ ID NOS: 2, 4, or 134, while claims 76 and 82-83 recite antibodies that bind to peptides of SEQ ID NOS: 2 and 134. As described in the paragraph on page 6, lines 12-23 of the substitute specification filed on May 15, 2002 (including the May 8, 2003 amendment to said paragraph), SEQ ID NOS:2 and 134 are human sequences derived from different clones, and SEQ ID NO:4 is the corresponding mouse sequence.[2] Further, as shown in the ClustalW alignment of these sequences in the document attached as Exhibit 1, SEQ ID NOS: 2 and 134 differ in one amino acid residue only, and SEQ ID NOS: 2 and 4 are 89% identical.

It is respectfully submitted that antibodies that bind to or that are raised against SEQ ID NOS:2, 4, and 134 (1) share a common utility, and (2) share a substantial structural feature disclosed as being essential to that utility (see citation of *In re Harnish* in paragraph 7 of the office action). Specifically, antibodies to the human and mouse orthologues of applicant's novel protein share common utilities in any number of applications, *i.e.*, in detecting expression of presenilin protein in tissues, ELISA assays, and affinity chromatography of presenilin samples.

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[2] It is noted that SEQ ID NO:4 and SEQ ID NO:136 are, in fact, identical.

In addition, the antibodies would share substantial structural features common to all antibodies, and could bind to identical antigenic sequences. For example, using the language of claim 75, an antibody binding to any six amino acid segment of residues 51-144 or 213-309 of SEQ ID NO:2 would bind to a corresponding segment of SEQ ID NO:4 or 134 (see Exhibit 1). Indeed, most antibodies raised against SEQ ID NO:2 would react with SEQ ID NO:134 (the only antibodies who wouldn't are those specific for the single amino acid change at position 205), and many could cross-react with SEQ ID NO:4.

Finally, it is believed that any sequence or literature search for prior art to antibodies against any of SEQ ID NO: 2 would necessarily be fully or nearly co-extensive with a search for prior art to antibodies against SEQ ID NOS: 4 or 134, because of the high sequence similarity of the antigens.

For all of the above reasons, it is respectfully submitted that, after entry of the present amendment, no pending claim sets forth an improper Markush group. Reconsideration and withdrawal of the present objection is therefore earnestly requested.

Indefiniteness

The Examiner has rejected claims 74-79 as allegedly indefinite for reciting the terms "specifically binds" and "selectively recognizes."

Again, the undersigned gratefully acknowledges the Examiner's suggestion for claim language that would overcome the present rejection. According to the Examiner's suggestions in the telephone conversation of November 20, 2003, which the undersigned understands were based on discussions with a U.S.P.T.O. expert in the relevant field, the amended and new claims all recite an antibody that "binds to" or an antibody that is "raised against" the proteins and peptides of the present invention. It is noted that, as explained above (see "Remarks"), the specification describes that the antibodies of the invention have specific binding affinity for the antigen. As such, while the specific wording of the binding features of the antibodies have changed throughout prosecution, ("binds", "raised against", "capable of binding", "binding", "specifically binds", "specifically

recognizes", "selectively binds", "selectively recognizes"), the scope of the claims has remained the same.

It is therefore believed that the present rejection has been overcome and should be withdrawn.

Request for Rejoinder

Since it is believed that, upon entry of the present amendment, claim 74 is allowable, rejoinder of claims 80 and 81 is respectfully requested. See *In re Ochiai*, 37 USPQ2d 1127 (Fed. Cir. 1995) and *In re Brouwer*, 37 USPQ2d 1663 (Fed. Cir. 1996). See also MPEP 821.04, which states (emphasis added),

> Where product and process claims drawn to independent and distinct inventions are presented in the same application, applicant may be called upon under 35 U.S.C. 121 to elect claims to either the product or process. See MPEP Section 806.05(f) and Section 806.05(h). The claims to the nonelected invention will be withdrawn from further consideration under 37 C.F.R. 1.142. See MPEP Section 809.02(c) and Section 821 through Section 821.03. However, if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined.

See, also, USPTO Official Gazette article entitled "Guidance on the treatment of product and process claims in light of *In re Ochiai*, *In re Brouwer* and 35 U.S.C. 103(b)", 1184 O.G. 86 (March 26, 1996), the text of which is attached as Exhibit 2.

Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Dated: March 15, 2004

Respectfully submitted,

By _____

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Exhibit 1: ClustalW alignment of SEQ ID NOS:2, 4, and 134
Exhibit 2: 1184 O.G. 86 (March 26, 1996)